

WHAT IS CLAIMED IS:

Sub 1
1. An optical sender comprising:
a light source for outputting a light beam;
an optical modulator for modulating said light beam in accordance with a main signal to output an optical signal; and
means for shutting down said optical signal when receiving at least one of a power alarm relating to on/off of power supply and a wavelength alarm relating to the wavelength of said light beam.

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2. An optical sender according to claim 1, further comprising:
a circuit for supplying a power to said light source; and
a power supervisory circuit for monitoring on/off of supply of the power to said light source and outputting said power alarm during a given time period from a time the supply of the power to said light source becomes on or off.

3. An optical sender according to claim 2, wherein said power supplying circuit comprises a constant current source.

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4. An optical sender according to claim 1, further comprising:

a wavelength monitor for detecting the wavelength of said light beam; and

a circuit for outputting said wavelength alarm when the wavelength detected by said wavelength monitor is deviated from a predetermined range.

5. An optical sender according to claim 4, further comprising means for controlling said light source so that the wavelength detected by said wavelength monitor is maintained constant.

6. An optical sender according to claim 5, wherein:

said light source comprises a laser diode; and
said controlling means comprises means for controlling the temperature of said laser diode.

7. An optical sender according to claim 4, wherein said wavelength monitor is provided between said light source and said optical modulator.

8. An optical sender according to claim 4, wherein said optical modulator is provided between said light source and said wavelength monitor.

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C37 9. An optical sender according to claim 4, wherein:

said light source comprises a laser diode for outputting a forward beam and a backward beam;

said forward beam being supplied to said optical modulator, said backward beam being supplied to said wavelength monitor.

10. An optical sender according to claim 1, wherein said shutting down means comprises:

an optical element for receiving said optical signal output from said optical modulator; and

means for controlling said optical element so that the transmittance of said optical element is reduced when receiving at least one of said power alarm and said wavelength alarm.

11. An optical sender according to claim 10, wherein said optical element is a Mach-Zehnder type lithium niobate modulator.

12. An optical sender according to claim 10, wherein said optical element is a Mach-Zehnder type semiconductor modulator.

13. An optical sender according to claim 10, wherein said optical element is an electroabsorption type modulator.

14. An optical sender according to claim 10, wherein said optical element is a semiconductor optical amplifier.

15. An optical sender according to claim 1,

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wherein said shutting down means comprises means for switching the operating point of said optical modulator and shutting down input of said main signal into said optical modulator when receiving at least one of said power alarm and said wavelength alarm.

16. An optical sender according to claim 15, wherein said optical modulator is a Mach-Zehnder type lithium niobate modulator.

17. An optical sender according to claim 15, wherein said optical modulator is a Mach-Zehnder type semiconductor modulator.

18. An optical sender according to claim 15, wherein said optical modulator is an electroabsorption type modulator.

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19. A terminal device for wavelength division multiplexing, comprising:

a plurality of optical senders for outputting optical signals having different wavelengths; and
an optical multiplexer for receiving said optical signals to output wavelength division multiplexed signal light;

wherein each of said optical senders comprises:
a light source for outputting a light beam;
an optical modulator for modulating said light

beam in accordance with a main signal to output an optical signal; and

means for shutting down said optical signal when receiving at least one of a power alarm relating to on/off of power supply and a wavelength alarm relating to the wavelength of said light beam.

20. An optical communication system for wavelength division multiplexing, comprising:

first and second terminal devices; and

an optical fiber transmission line for connecting said first and second terminal devices;

wherein at least one of said first and second terminal devices comprises:

a plurality of optical senders for outputting optical signals having different wavelengths; and

an optical multiplexer for receiving said optical signals to output wavelength division multiplexed signal light;

wherein each of said optical senders comprises:

a light source for outputting a light beam;

an optical modulator for modulating said light beam in accordance with a main signal to output an optical signal; and

means for shutting down said optical signal when

receiving at least one of a power alarm relating to
on/off of power supply and a wavelength alarm relating to
the wavelength of said light beam.

21. An optical communication system according to
claim 20, further comprising at least one optical
amplifier arranged along said optical fiber transmission
line.

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